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A Time Saver and Production Builder

Not one, but many features make Akron Barrows indispensable in modern gas plants. For this reason many of the larger companies have standardized on them exclusively. Just as the Round Nose Charging Barrow is designed especially to facilitate the charging of gas generators, each other type of Akron Barrow has outstanding advantages not found in competitive lines. Our exclusive building principles mean saving of time and increased production. Send for descriptive literature.

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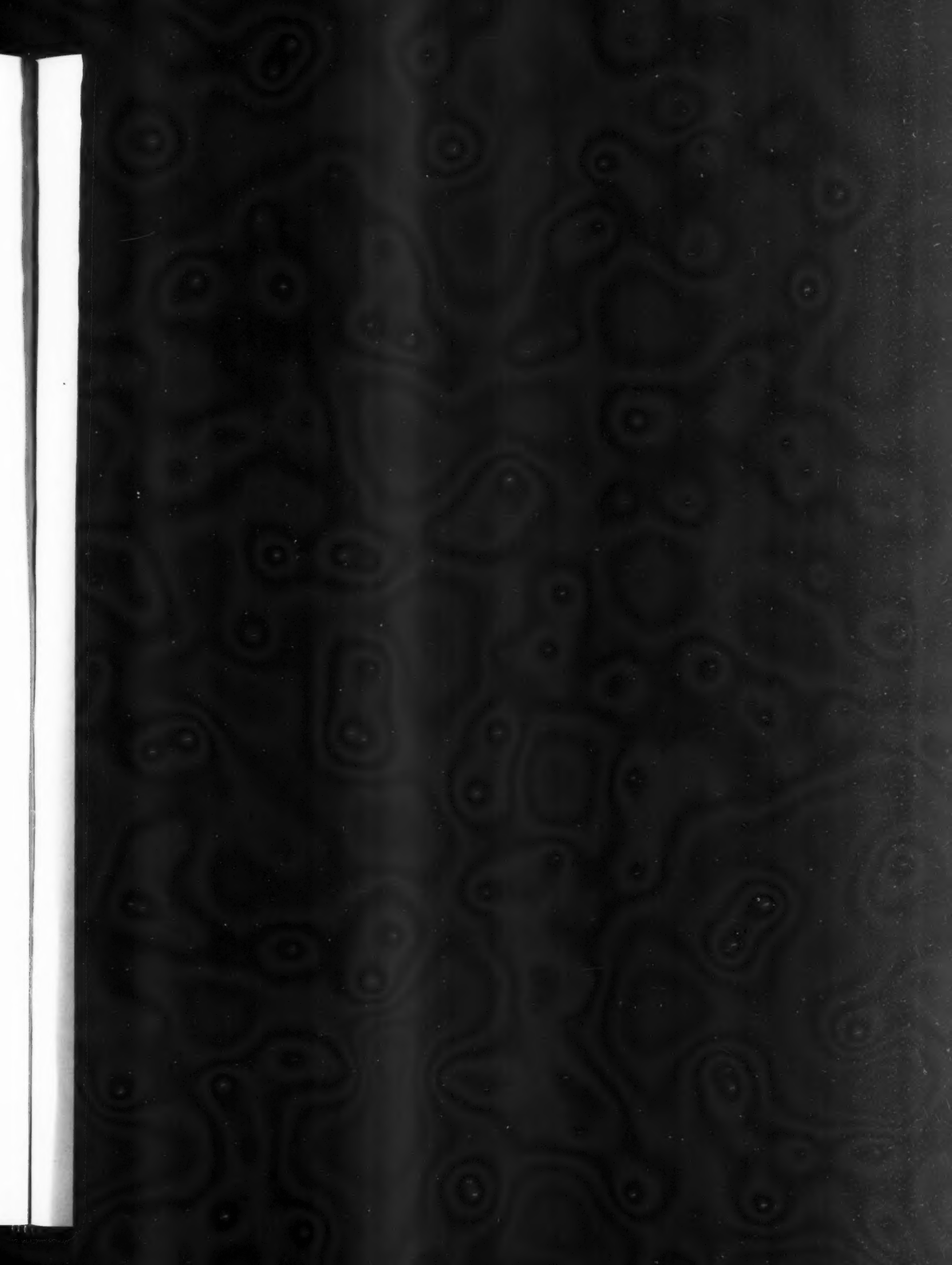

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American
Gas Engineering Journal

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The Attitude Toward House Heating

Businesses That Are the Gas Company's Monopoly — Others That Are Vulnerable to Competition

By E. D. CARPENTER

Present-day conditions seem tending to push the gas business back within the limitations wherein it will look upon gas lighting as a principal load and cooking as its bulk business.

We know there is a big revival of interest in lighting. Is the activity that is manifest due to a sudden reversal in people's tastes as to lighting, or are gas companies stocking up with fixtures with the idea in mind to fill up the gaps they figure will result from higher rates in the bulk businesses—industrial, etc.?

We know that some gas companies are actually, whether consciously or unconsciously, discouraging water-heater sales.

Here and there we see signs of reawakening interest in industrial business, but in general there appears only apathy.

Electric range manufacturers apparently feel that the time is ripe to popularize electric cooking. And experienced gas men do not laugh away the possibility of their succeeding with the self-confidence they once did.

As to house heating, there is little definite to enable one to gauge opinion one way or the other. There has been loose talk enough, but it is contradictory. Next fall and winter will have to be on us before definite conclusions may be arrived at in this matter.

What Is the Future for the Gas Business?

What, then, is the future in the gas business?

A general prevalence of B.t.u. standards will compel a recourse to gas lighting at its best—incandescent mantles. The complete absence of the antiquated open-flame burner will tend to change people's viewpoint that gas lighting is old-fashioned and out of date. Because lighting is a business in which the prohibitive point of rates is very high, gas companies will show a higher degree of interest in securing and retaining it than they have been showing in recent years. These facts indicate that the lighting business is due to come in for a new and greater life. But a mere lighting business at its maximum possibilities will not make a gas business at all on a comparative plane with the electric industry.

Industrial gas we must make and sell at salable rates, or manufacturers or groups of manufacturers will build their own gas plants or coke-oven plants and produce their own gaseous fuel. In the industrial field, a seemingly, at first thought, strange contradiction because of the very magnitude of our success in selling the gas-fuel idea, our prospects of success do not seem so great as they did a few years ago. When the biggest customer could be expected to buy perhaps a hundred thousand cubic feet a month, the business, provided it could be secured, was a gas company monopoly.

But from the rivet heater, the jeweler's furnace, the lard-rendering furnace and the water still we have progressed to the immense plate-bending furnace, the common mold, etc. Big industrial gas users have built up their needs until, sooner or later, they will begin to figure if it would not be cheaper to produce their own gas than to purchase it. And even aside from commission control of our rates, we will be handicapped in this computation by the overhead on miles of transmission lines under costly pavements and roads.

It is practically impossible to conjure up a competitor of gas for water heating. Solid fuel might compete in cost, but not sufficiently to counterbalance the immense difference in our favor in the matter of convenience.

In cooking there is much that is problematical. A good part of the population of our cities still originates in the country; and where in the country are not electric transmission lines? Our rural population is every day becoming more wedded to the convenience idea and doesn't so closely figure its value as against its cost. To the modern mind the coal range is an abomination, especially in summer. We may expect in the future, in the rural sections, an almost predominance of electric cooking. And this great part of our urban populations that originates in rural sections will come sold on the electric range. Added to these, the electric cooking range people will find innumerable customers among housewives who like to be *different*, what they imagine is in the last word **modern.** omparative figures, scientifically

computed, may be advanced against electric cooking, but nevertheless a goodly proportion of our layman population still buys and exists considerably on notions and fads.

Gas space heating, especially auxiliary heating, is a business in which seemingly we should be practically free from serious competition.

Electric space heaters are still comparatively very poor and obviously expensive makeshifts. Even the layman shies away from them on this basis. It is hardly likely that they can be made to an appreciable degree less costly in operation.

Gas prices tend higher. But coal prices tend so even more rapidly. And there is that ever-present bogy of uncertainty of supply.

With higher heating costs people tend more and more away from the old habit of keeping every room heated, whether occupied or not. And in the last analysis very few rooms in the average home are actually occupied for any considerable part of the day.

The living-room we might set down as in fourteen to sixteen hours' use. The entrance hall, where there is one, the same. The upper halls, as a usual thing, should get enough heat from the first hall to keep them comfortable. The dining-room is used perhaps four hours a day. Bedrooms need heat, say, but for two hours. When kitchens are in use a heat of some kind is usually being thrown off.

With an auxiliary gas heater in the living-room, one in the front hall burning, we might say, steadily, an automatic gas water heater in the cellar aflame upon demand, a gas or coal range in the kitchen—the first in use upon requirement—and auxiliary heaters available in other rooms, a family should manage to keep healthy and comfortable and have its water pipes safe from freezing in the coldest weather at a cost not greatly exceeding that of a central heating plant capable of warming the whole house at the same time. In milder days—and they are many—the cost should favor gas.

What Do We Conclude from All This?

We thus, as we enumerate our loads at the present time, have just two in which we have not a great deal to fear from competition—water heating and space heating.

Gas lighting is an extremely desirable load. So is industrial business and cooking. They are worth fighting for and the gas business may be relied upon not to relinquish willingly any possible part of either.

But while we are out on speculative jaunts it is just as well now and then to put aside small parts of our takings into sure-thing investments, even if at the time we feel we are paying for the privilege in the loss of interest we might otherwise have on the money.

Water heating and space heating seem just such a sure-thing investment, a groundwork business which cannot easily be taken away from us by competition. Surely they should be built up if only as a safeguard—something to fall back on in times of stress.

The coming cold season will represent our best opportunity to become big factors in space heating. No gas company should let the opportunity slip by without profit from mere lack of being ready.

Output of Coke in the United States

One of the outstanding features of the American coke-oven industry in 1919 was the great increase in the proportion of by-product coke as compared with beehive coke. According to preliminary estimates made by F. G. Tryon, of the United States Geological Survey, the total beehive and by-product coke production last year but excluding gas works coke) was 44,821,000 net tons—a decrease on 1918 of 11,657,000 tons, or 21 per cent. This decrease was confined almost entirely to beehive coke, the production of which fell of 36 per cent. The output of by-product coke decreased only 3 per cent. The output of by-product coke consequently exceeded that of beehive coke for the first time. In 1918, about 46 per cent of the total coke made in the United States was produced in by-product ovens, and 54 per cent in beehive ovens. The proportions were reversed last year; 56 per cent coming from by-product ovens, 44 per cent from beehive ovens. The quantity of coke made in by-product ovens last year was 25,171,000 net tons. During the twelve months there were completed and put in blast 1,228 new by-product ovens. The maximum capacity of the by-product plants has been estimated at 27,000,000 net tons of coke at the beginning of 1918, 33,700,000 tons in 1919, and 39,500,000 tons at the commencement of this year. These annual capacities are estimated on a basis of 100 per cent operation. In actual practice, however, an average operation above 90 per cent cannot be assumed for the country as a whole; and the safer figure of 85 per cent would appear better justified by experience. On the last-named basis, the present capacity of the country would be about 33,600,000 tons. Plants are now under construction the completion of which might raise the capacity to approximately 43,300,000 tons, or 36,800,000 tons on an operating figure of 85 per cent. The quantities of by-products recovered during past year are estimated at 668,200,000 lb. of sulphate of ammonia or its equivalent, 251,000,000 gallons of tar, 84,800,000 gallons of crude light oil, and 367,700,000,000 cu. ft. of gas.—*Gas Journal*.

"Double Gas"

In a current issue of the *Journal of the Society of Chemical Industry* an article appears in which the author advocates the adoption of a system of primary gasification, followed by steaming—leading to the production of "double gas." The gas has a calorific value of 3,330 calories per cb.m., as compared with 5,500 calories for ordinary coal gas from the same coal. The amount of coal gas produced per 100 kg. of coal is 33 cb.m.; and the amount of "double gas," 160 cb.m.—the total calorific values being 425,100 calories in the former case (assuming the coke to be used for the production of water gas), and in the latter case 533,400 calories. The minimum calorific values of the gas and tar are given as 60.2 and 8.3 per cent of the heat of the coal respectively. The advantages claimed for the process are: Reduced floor space; apparatus always ready for use; reduction in labor, and low initial cost. The yield of by-products is greater than if coal and water gas are produced separately and then mixed. The tar (sp. gr. 1.042) contains: Water, 33.7 per cent; pitch, 18.9; paraffin, 1.5; light oils, 19.4; heavy oils, 24.3; ammonia, 0.91; insoluble in benzol, 1.65, and ash, 0.28.

American Gas Association Sub-committee Moves for Radical Changes in Sales Organizations

G. M. Karshner, as Chairman, Summarizes View Arrived At After Study of Means to Hold Good Salesmen in Gas Business

The question of properly compensating salesmen in the gas industry is one that has been a source of a great deal of experiment, failure, partial success and success ever since gas companies established departments to sell gas appliances or gas, declares the Report of the Subcommittee on Compensation of Salesmen of the Commercial Section of the American Gas Association, prepared for the annual convention to be held in New York City in October.

Unlike most problems of merchandising, gas companies are in the peculiar position of selling not only their main products, gas, but also appliances for using the gas. Whenever such a condition as this exists, the matter of service becomes most important; therefore, the gas company's problem is to sell gas, to sell appliances to consume the gas and to sell service.

When sales departments in gas companies were first formed, the main idea in the mind of the gas manager was to sell gas, but soon he had to assume the active selling of gas appliances in order to push the sale of gas. Dealers did not have the same interest as the gas companies in selling appliances which were safe, durable and efficient; and although the gas companies sold gas as a result of the dealers selling gas appliances, nevertheless efficient gas appliance service did not exist, due to the fact that the gas companies had no control over the quality of the appliances sold to their customers, and the dealer was just as much interested in selling coal and oil consuming appliances; therefore, it became absolutely necessary for the gas companies to engage in the gas appliance merchandising business for their own consumers.

The idea of merchandising gas appliances has so developed in the last ten years that now the sales manager's first idea is to sell appliances which will give good service, realizing that when the appliances are sold gas must be sold also.

In consideration of the fact that merchandising appliances have now become an important issue, we must all realize that to merchandise successfully it is necessary to have good salesmen, and in order to have good salesmen we must have a system of compensation which will attract and hold good men. In the past three or four years the turnover in the sales departments in most gas companies has been very large, showing that salesmen are able to make more money in other lines of business.

With the above considerations in mind, your committee started to work to suggest systems of paying salesmen which certainly should be tried, particularly by those gas companies which are not merchandising gas appliances at a profit and at the same time giving good appliance service to their consumers.

In order to obtain certain information and certain expressions of opinion, we sent out a questionnaire to twenty-five gas companies of various sizes and obtained information as follows:

District Salesmen

District salesmen are paid a straight salary, a salary plus commission, a straight commission, or a salary plus a credit of either commission or points, or commission and points after deducting from such credit the amount of salary paid. In some cases points are based on gas consumption; in other cases points are arbitrarily fixed, based on the manager's opinion of the value of the appliance sold.

The straight salary system has been tried in practically every company, and is quite generally recognized as a failure, although some companies still pay salesmen on this basis.

District salesmen are usually allowed full credit for office sales where there is sure evidence that the district salesman has, within a certain time limit, been working on a sale to the customer on the district. Full credit is usually allowed the district salesman for sales that he makes on leads, regardless of the source of the leads, whether they be through the mail, telephone, or from a customer calling at the gas office, etc.

A salesman is usually paid on a basis of orders executed. Where orders for appliances are canceled before the appliances are installed, no credit is allowed. Where an appliance has been sold, passed through the credit department, installed and not paid for and returned, some companies deduct credit from the salesman and others do not. Those that do not deduct believe in the principle that when a salesman has made a sale, if the sale passed the credit department it is not the fault of the salesman if the appliance is not paid for.

Salesmen in the majority of companies take applications for gas service, meters, successions, receive complaint orders, follow up complaints, high bills, etc. In general, they receive some sort of compensation for this work, either in the way of points of fixed value or, where they are on a salary and commission basis, the salary part of their system of payment is supposed to be the compensation for this class of work.

Practically all companies state that the clerical work under their various systems of payment is very little.

Practically all sales managers believe that salesmen would do more effective work if they were on some system of payment other than a straight salary.

Only one gas company manager thinks that the salesmen in an organization are overpaid. Most of the managers believe that the salesmen in a gas company organization should be better paid than other

classes of employees in the organization, because the salesman's present and future are in the amount of goods that he sells and that his sales very often depend on the existing general business conditions; because certain things may happen which are no fault of his, but which would greatly reduce his compensation; because most promotions are made to the higher positions in the gas industry from the engineers, accountants, bookkeepers, etc., the salesman has not as much chance in his individual work to show his executive ability, and because his expenses are usually greater than the ordinary company employee, as he has to come in contact with all classes of people and unconsciously his standard of living grows higher, due to his associations on the district.

We find the amounts drawn by the district salesmen are from $100 per month to $250 per month.

Floor Salesmen

We find most of the companies paying a straight salary to the floor salesmen. Some few companies pay a salary plus commission on special appliances which it is desired to push at various times.

It seems to be against the judgment of the majority that it is wise to pay floor salesmen straight salary plus commission on all sales, for the reason that other departments, such as the application, complaint, collection, cashier's, etc., which come in contact with the public, receive no commission, although the employees of these departments are instrumental very often in promoting the sales of appliances.

It is the general opinion that floor salesmen should not receive any compensation on leads furnished to district salesmen, as it would tend to allow them to put the responsibility of the sale up to the outside organization and they would lose their efficiency as closers.

The salary earned by floor salesmen is from $70 per month to $175 per month.

Proposed Systems—Regular District Salesmen

It is the belief of your committee that any system should be based on the following considerations: First, that a salesman should be paid a salary or drawing account sufficient to cover his living expenses; second, he should be paid both for the commercial transaction of selling the appliance and for the sale of the gas consumed by the appliance; third, the operation of the system should be so elastic as to show actual recompense for results secured; fourth, the system should place the salesman on his honor and at the same time force him to do effective work, without excessive supervision and voluminous reports, records, etc., which add largely to selling expenses.

Number One

Pay the salesman a drawing account; against this drawing account, or salary, credit a fixed commission on the sale price of each appliance sold and a fixed number of points, based on the estimated annual gas consumption of the appliance for the first year, considering a point as representing 1,000 cu. ft. of estimated annual gas consumption. In different situations, commission values probably should range from 5 to 15 per cent of the actual sale price and point values should range from 2 to 5 cents per point, or per thousand feet of estimated annual consumption.

At the end of the month the total amount of commissions and points for appliances installed through orders taken by the salesman should be credited against his drawing account or salary for the month and the excess amount of credit over salary received should be paid him. If the total credit is less than the salary, the deficit should be made good during the next or following months, before any additional credit over salary is paid to him.

The above system is elastic, because commission and point values can be changed from time to time, depending on conditions over which the salesman has no control. If general business conditions in a city vary, if it is desired to push any class of goods at special times or any special efforts in any direction are required, values of commissions and points can be raised or lowered at any time. If a salesman does a large amount of work other than selling, either a third credit can be established against his salary or drawing account, or the value of commissions and points can be regulated to compensate him for this other work.

It has been demonstrated that this system has largely increased the efficiency of salesmen, has decreased the selling cost per appliance, and has decreased the selling cost per thousand feet of annual gas consumption, compared with methods formerly in use. The salary or drawing account depends on the earning power of the salesman and is adjusted annually according to the earning power of the salesman. This system complies with the four necessary considerations; it allows for a salary or drawing account necessary to cover living expenses; the salesman is paid both for the gas appliance sale and the gas sale; it is elastic; it puts a salesman's earning power absolutely up to him, without excessive supervision and reports, and he is paid for exactly what he does and not for what somebody thinks he can do.

Number Two

Pay the salesman a salary or drawing account, against which is credited commission on the sale of appliances.

At the end of the month the total amount of commissions should be credited against the drawing account or salary for the month and the excess amount paid to the salesman, deficit to be made good in following months.

This system difftrs from No. 1 in that no consideration is taken of the sale of the gas consumed by the appliance.

It covers most of the considerations outlined as necessary. It does not pay the salesman properly for the installation of gas burners or any appliance where the selling price is low compared with the gas consumed. Also, the salesman is not as well satisfied when he is being paid only for the sale of an appliance, because he knows that the gas company should be getting profits from the sale of the gas that he is indirectly selling when he sells an appliance

Number Three

Pay the salesman a salary plus commission on appliances sold.

(*Continued on page* 168.)

Baltimore Consolidated Meets Public Half-way and Gains Hearty Co-operation

Sells "Thrift" Lights Without Profit—18 Per Cent Only Installed by the Company Although Company Agreed to Install All Free—Public Will Co operate if Treated Fairly

The Consolidated Gas, Electric Light & Power Company, of Baltimore, Md., possesses a great advantage over almost every other gas company in the country in the present scarcity of gas oil, for it has available a supply of coke oven gas from the Maryland plant of the Bethlehem Steel Company sufficiently large to meet completely the summer demands and to assist materially in filling the winter needs. In order to make full use of this supply and to avoid the economic waste which would result in not fully utilizing it, the company petitioned the Public Service Commission of Maryland for an order temporarily reducing the established heating value standard of 550 B.t.u., monthly average, to 500 B.t.u. This was granted until October in the form of a temporary order, with certain conditions regarding rates. The company has petitioned the commission to unconditionally make this the permanent heating standard.

A relatively small number of the company's customers still use flat-flame burners. With these burners practically no illumination can be obtained from the coke oven gas delivered in Baltimore. The solution of the problem thus presented was found in the Welsbach "Thrift" lights, which, fortunately, could be obtained immediately and in large quantities. An extensive educational advertising campaign has been conducted since the first of June in an effort to replace the remaining flat-flame burners with "Thrift" lights.

During the first forty days of the campaign the total sales amounted to 64,392 "Thrift" lights. The company adopted the policy of selling them without profit and installing them without charge. The fortieth day showed that 52,893 lights had been bought and installed by customers, while the company was called upon to install 11,499.

The feature that made these lights particularly adaptable in this emergency was the fact that they could be installed in old globes and fixtures. Under the present conditions obtaining in Baltimore they consume approximately 2½ cu. ft. of gas per hour and give an illumination equal, if not superior, to that possible with a flat-flame burner consuming gas at the rate of 5 ft., under the conditions which pre-

Flat Flame Gas Burners are Wasteful and Unsatisfactory
Install the Welsbach "THRIFT" Light
Flat Flame Burners will not give SATISFACTORY SERVICE
INSTALL THE WELSBACH "THRIFT" LIGHT
Sold without profit
Connected without Charge
15c EACH
The THRIFT Burner gives 30 Candle-Power and uses 2 Cubic Feet of Gas per hr.
The WELSBACH "THRIFT" BURNER Uses 2 Cubic Feet of Gas an hour and gives 30 Candle Power
FLAT FLAME BURNER USES 5 Cubic Feet OF GAS AN HOUR
FLAT FLAME BURNER USES 5 CUBIC FEET OF GAS AN HOUR
THRIFT LIGHT

WINDOW DISPLAY OF BALTIMORE CONSOLIDATED DURING THEIR "THRIFT" LIGHT CAMPAIGN

vailed in Baltimore prior to the establishment of the B.t.u. standard in 1916. The old standard of gas was 20 c.-p.

There are 146,000 gas and 71,000 electric consumers in Baltimore, which shows that, despite the trying times that the gas industry has been through in the past two years, a large percentage have remained gas consumers, hopeful for the future.

Special efforts were made at the gas office to instruct consumers in the best method of installing the "Thrift" lights. A small instruction slip was handed out with each light, with complete directions for installing and using.

Although the company advertised and agreed to install all lights free, only 18 per cent were installed by the company. Over 80 per cent took the lamps with them and installed them satisfactorily. This shows a willingness on the part of the public to cooperate if they are treated fairly.

Recent figures show that over 100,000 lamps have been sold. The daily average for the first fifty-six days was 1,400.

The following statement was made by the company to users of flat-flame gas burners:

"The use of gas in flat-flame burners has for many years been recognized as a wasteful and unsatisfactory method of illumination. During the war the United States Fuel Administration, in the interest of the conservation of coal and oil, strongly urged the elimination of flat-flame burners. The city of Baltimore, many years ago, for street lighting substituted the incandescent gas burner for the flat-flame burner. This was done because of the increased gas illumination possible with a decreased gas consumption.

"To-day the percentage of gas used in flat-flame burners is very small. For gas illumination, the modern method—the incandescent mantle burner—is most widely used. Gas is used mostly for heating and cooking purposes. In Maryland, as in other States, this condition brought about the abolishment of the old candle-power standard and the establishment of the heating value standard. The change was accompanied in Baltimore by a reduction in rates.

"The coke oven gas supply from Sparrows Point has been increased to such an extent that now, during the summer months, at the time of the smallest gas consumption in Baltimore, the supply is sufficient to meet all requirements, making unnecessary the use of any gas produced from gas oil, which is not only exceedingly difficult to secure but has increased in price about 500 per cent above prewar prices. With incandescent mantle burners, the present gas is as satisfactory for illumination as the gas heretofore manufactured at our own plant. It is not satisfactory for illumination in flat-flame burners. To decline to receive any portion of this available coke oven gas and substitute for it gas produced from gas oil would be an economic waste for the community. The price of gas oil has increased from 2.4 cents per gallon before the war to 15 cents per gallon. For this item alone—gas oil—there would be required to furnish gas from our plant, 3¼ gal. per thousand cubic feet, costing nearly 50 cents per thousand cubic feet. Were it not for the available coke oven gas it would be utterly impossible to manufacture gas on this basis and sell it at the present maximum net rate of 75 cents per thousand cubic feet.

"So far as the heating value of the coke oven gas is concerned which is somewhat less than the present requirements, the pending recommendation of the company to the Public Service Commission is to broaden the regulations in a way that would insure the gas consumers of Baltimore receiving during the fall and winter months an exact equivalent of any deficiency in the heating value of the gas sent out during the summer months.

"Other cities have found it necessary to increase gas rates. In Washington, where the method of manufacturing gas is the same as at our plant in Baltimore but where there is no supply of coke oven gas, the Public Service Commission of the District of Columbia has just authorized an increase in gas rates from 95 cents to $1.25.

"We are trying to avoid increasing gas rates in Baltimore."

Navy and Producers Agree on Gas and Oil Contracts

The controversy between the Navy Department and oil producers over the fuel oil supply for the navy as far as West Coast requirements are concerned has been settled by the acceptance of contracts by the producers for oil at $2 a barrel and gasolene at 21½ cents a gallon.

The navy has arranged for 90 per cent of its West Coast fuel under these terms, and commandeering, which was resorted to on numerous occasions during the past year, has been abandoned.

A variety of bids were received when the navy first signified its desire to contract for the next year's supply The majority of the bids were based on market quotations at the time of delivery, and these proved unacceptable to the government. To correct this situation and, if possible, to remove these elements of price uncertainty attending a fluctuating market under long term contracts, direct negotiations with the several suppliers were entered into. The result has been that contracts now being prepared cover 90 per cent of the fuel oil needed during a three-month period at a firm basic price.

PUBLICATION

"Casing Troubles and Fishing Methods in Oil Wells"

Bulletin No. 182.

Issued by the U. S. Bureau of Mines. Prepared by Thomas Curtin.

In its efforts to prevent waste and increase efficiency in oil-well practice, the Bureau of Mines has recently issued Bulletin 182, "Casing Troubles and Fishing Methods in Oil Wells."

Sometimes, especially in new fields, after relatively large amounts of money have been spent on drilling and general development work, a partially completed well will be abandoned because of casing troubles which are believed by the management to be insurmountable. Often these troubles can be overcome, in fact, in fields where casing difficulties are of almost daily occurrence, methods have been evolved for very successfully combating them.

American Gas Engineering Journal

SIXTY-FIRST YEAR

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As the Journal Views It

Gas Heat Brought to the Fore

It is particularly timely that at a period when there might be a trend away from it due to erroneous magnifying of its cost because of necessarily increasing rates, gas heating is promised an unusual degree of national publicity.

The Welsbach Company, after a brief period in the heating field is apparently convinced of the merit and attractiveness of its gas heater to the point where it feels secure in launching an especially ambitious advertising campaign. Before the year is out, by the time next winter has approached its full intensity, this one company expects to reach more than four million people, to bring gas heating in a most attractive form to public attention in every state in the Union and every city and town of importance.

The significance of this announcement is obvious. There are other heater manufacturers who have high confidence in their product. Some are quite sage as to the influence of advertising. They will see in the Welsbach plan a summons to increased advertising appropriations. Alone the Welsbach effort will be a tremendous boom to gas heating. The more ambitious it is launching will impel competing manufacturers to maybe even a greater boom.

Present-day conditions will augment the tendency to gas heating. Householders are succeeding in getting in their usual winter's supply of coal. But when they look at the bill they see conservation as they never saw it before. The six, eight, ten and fourteen tons of coal are down there in the cellar now, but the sagacious householder is already laying plans that a greater proportion of it will be there still when next spring's sun

begins to shine warm again than there has remained after past winters. Fireplaces are being brushed up for wood fires where the wood may be had for the cutting and carrying, for gas fireplace heaters where otherwise. Disused lighting outlets are being tested to see whether gas will still come out of them. They're fine outlets for tube connections. Householders without number are making ready to use auxiliary gas heating up to the very edge of settled cold weather. Fall working and early spring working of the central heating plant will be conspicuous largely by its absence.

To the gas company commercial organization there are in these impending events a stimulus and a warning. Unless the policies of their companies hold them back they may easily do a land-office business in heating appliances. But gas company commercial organizations are not alone in watching for gas-appliance sales opportunities. There are scattered around the country quite a group of merchants and plumbers earnestly striving to turn an occasional honest dollar.

The average American manufacturer is not entirely a philanthropist when he launches a national advertising campaign. He seeks to create a consumer demand, it is true, so that dealers may benefit, but principally that he also in turn may benefit. And he isn't at all secretive as to what he plans. Generally he manages to acquaint dealers with his intentions so that they may start stocking up even before his big publicity gets well under way. Dealers, too, it may be said, are not slow in stocking up. They have learned by experience what advertising can do.

There will be a big consumer demand for gas heaters. This may be taken for granted. There will be an unusual demand for particular kinds of gas heaters. Advertising will insure this.

Gas companies may not want to sell gas heaters. But whether they do or not they will not avoid the necessity of supplying the gas to keep them burning or in any worth-while degree hold down the number of gas heaters sold. They may of their own volition sacrifice the opportunity of profits that lie in appliance sales, but they will not free themselves of any operating difficulties thereby.

If the gas company permits the dealer to get the jump on it in stocking up on heaters it is apt to see what possibly may be the greatest heating appliance sales year go by with all the plums falling to the department store, the plumber, the hardware man and what not.

Makes for Greater Benefit from Convention

To some it may appear that the American Gas Association is taking the teeth out of its annual convention in releasing for immediate publication in the gas journals its various convention papers and reports as they come from the printer.

A second thought will alter this somewhat superficial judgment.

Even at past conventions when the paper was actually read it was an old story, those in attendance having had copies since the first day.

And, after all, why do gas men gather at the various sessions—to hear the papers or the discussion? The AMERICAN GAS ENGINEERING JOURNAL rather inclines to the latter view.

Releasing papers thus early gives gas men a greater period in which to study their contents. Thus the discussion at the convention should be greatly broadened and more intelligent and helpful.

The JOURNAL feels that in this action, the association has taken an eminently logical step.

American Gas Association Sub-Committee Moves for Radical Changes in Sales Organizations

(*Continued from page* 164.)

This system differs from No. 1 in that no consideration is taken of the sale of the gas consumed by the appliance; it differs from No. 1 and No. 2 in that more records are required if the work covered by salary is to be definitely known to the management. It differs from both No. 1 and No. 2 in that the salesman may forget what the salary part of his compensation is for. It seems better for all of a salesman's orders to be credited against a salary rather than for him to have a definite salary plus credit on orders.

If a salesman is paid either on the basis as outlined in No. 1 or No. 2, his credit rates, per appliance, must be higher than if he is on a salary plus credits for appliances, as would be the case in No. 3. The salesman is inclined to work harder and more effectively if all of his work is first to cover his salary, as each item of his total pay is a tangible amount. The credit for every order brings home more closely to him that he must produce for every dollar paid him by the company. The chances are very great that he does not produce for every dollar when he gets a straight salary as a salary, without any charge against it.

Your committee believes that some one of the three outlined systems of payment will successfully meet conditions in every gas company. We realize that in the smaller companies there may have to be some modifications where a salesman may be called upon to read meters, help in office work, etc., and No. 3 system of payment might be better fitted for the smaller company where these conditions exist. However, we firmly believe that even though this extra work may have to be done by the salesman, yet his salary should be considered a drawing account and a credit of so much per hour or day against his salary be allowed him for compensation. We believe he will sell more appliances.

According to the adaptability of the three systems outlined above, to the considerations which your committee believes should be covered in paying gas company salesmen, your committee wishes to recommend No. 1 system as the best, No. 2 system as the next desirable, and No. 3 as the next desirable. The

committee also wishes to recommend that if system No. 3 is used by any company, the salary part of tht system of payment be made a small part of the salesman's pay and the commission credits be as large as possible. Your committee wishes to go further and definitely voice its opposition to a straight salary system of payment or a straight commission system of payment for regularly employed district salesmen.

Below find suggested forms to be used in recording salesmen's work and compensation for it. The forms are for system No. 1, but can be adapted to No. 2 by leaving out credit for points and to No. 3 by slight modifications. If a third credit against salary be necessary for work other than sales it can easily be added by the addition of one more column.

SALESMAN'S BOOK

Date	Premises	Consumer	Number & style of appliance	Amount of sale	Order No.	Executed or canceled: Date	Executed or canceled: Disposition

SALESMAN'S BOOK—Continued

Ledger-Folio	Amt. of commission A	Points: No.	Points: Amount B	Points: Total A+B	Date commission and points credited	Checked by	Remarks

The above are the items carried in each salesman's book and is a complete record. The salesman himself enters all the items up to and including "Amount of Sale." The other items are entered by a clerk.

SALESMEN'S REPORT
(made up from salesmen's books)

Salesman	Number of appliances installed	Amount of commission	Number of points	Amount of points	CREDIT: Total credit A	Salary received B	Variation: Amount of credit over salary received (A—B) C	Amount of red figure made good this month D	Net amount paid to salesmen B+C—D
Jones....	50	$100	1,600	$80	$180	$150	$30	...	$180
Smith ...	60	150	1,800	90	240	150	90	$20	220

In this report Jones and Smith receive a salary (drawing account) of $150. Jones the previous month did not owe the company anything on the previous month's work; Smith had received his salary, but his total credits were $20 under his salary. This amount is carried in red the previous month under "C," and the current month under "D." The amount is deducted from total credit for the current month as shown. This report is made up from the salesmen's books for the month and for the period beginning Jan. 1 for the purpose of a complete year's record.

It will be noticed that the salesman's book is partially kept by himself; the clerical work with reports of this kind is very small.

Floor Salesmen

Your committee desires to recommend just one system for the payment of floor salesmen; namely, a straight salary plus commissions on specials which it is desired to push at various times.

We believe that the standard of floor salesmen should be raised, and we believe the only way to raise that standard is to make it possible for floor salesmen to earn good salaries.

We believe that when a customer comes to the floor of a gas company he expects expert attention from the salesmen. Questions of all kinds have to be answered about appliances and about other phases of our business.

We would like to suggest the idea of promoting district salesmen to positions as floor salesmen instead of the usual practice of promoting floor salesmen to district salesmen. We realize that this is a great departure from the present method of considering the problem, but we believe that our former policy of putting on the display floors either new salesmen or old employees when there is no other place for them to go in the organization has sent many customers away without sales being made, or has sent many customers away dissatisfied with some statement that has been made to them on the display floor about an appliance or for some other reason resulting from ignorance or inefficiency. We therefore recommend that a gas company try putting its best district salesman on the display floor for a short period of time, paying him a salary sufficient to cover his living expenses and giving him specials which it is desired to push, and determine whether this idea of the committee is correct. The committee is in a position of not being sure that our idea is sound, but we would like to see it tried out.

Your committee believes that whatever system of payment is used, the basis of payment should be such that a good salesman can earn as much as he can earn in any other line of business in a particular city. Your committee believes that inasmuch as salesmen in practically all lines of business are the best paid employees, the pay of gas company salesmen should not be compared with the pay given to other regular employees, but it should be compared with what salesmen can earn in other lines of business. Your committee believes that if a comparison is not made as above outlined, it will be impossible to hold good salesmen in the gas business. We have seen our best salesmen leave the gas industry on account of their limited earning power. We believe that most of those salesmen who have remained in the gas industry during the last four or five years have remained principally as a matter of loyalty to their companies, because they like their work and like their organizations. It is time for us to believe that gas appliances can be merchandised at a profit, but it cannot be done without good salesmen, and good salesmen must be properly compensated.

Power in Coal Tar

An article published recently in one of the technical journals in Berlin describes the great success which has been attained in the use of raw coal tar instead of tar oil for driving Diesel motors. When cleansed by filtering, and raised to a temperature of 60 deg. Cent. before use, the tar gives perfectly good results. The electricity works at Meiningen also report the direct use of tar as power oil; the tar there being produced in horizontal retorts, as it contains a larger proportion of carbon. At Meiningen the tar is first purified by heating, and allowed to stand until the solid impurities settle out. It is then filtered. Ignition is effected with paraffin or distilled petroleum.—*Gas Journal.*

Co-operative Plan in Baker, Ore.

By William Bliss Stoddard

Up in Baker, Ore., the local merchants, realizing that a large percentage of the business was going out of town, inaugurated an advertising campaign to combat this practice. They took an entire page in the local paper over which they placed a black heading: "Try Your Home Merchant First." The two middle columns were given over to reading matter—being an expose of mail order practices and deficiencies, while the rest of the page was divided pro rata among the progressive group, each of whom advertised as his fancy dictated. One of the most pertinent was the advertisement of the Basche-Sage Hardware ompany, who said:

Keep the Home Fires Burning

And see to it that they are of the cleanest, most labor saving, economical kind—that is to say GAS. See our splendid assortment of stoves, ranges, heaters and grates.

By purchasing your stoves from us, you increase our volume of business, enabling us to keep more employees, and also give you the advantage of our being able to buy larger consignments.

Phoenix Company Advertises Summer Rates

In order to enable them to keep their force busy during the summer and to lessen the rush that always prevails in early fall, the Pacific Gas & Electric Company, Phoenix, Ariz., make a specialty of hot water installation in August. In order to insure the necessary publicity they had a large number of blotters printed, one of which was placed under the door of each resident. On these were printed:

Now is the Time to Install a Gas Heater

During the month of August we are directing special attention to installing these heaters, and during this period we are making a special price for the heaters and the work.

You may live in a cottage or a palatial home—the same relative need of hot water exists. Call at our office for a demonstration, or telephone and have our salesman call at your home.

Pacific Gas & Electric Company

As these ads were printed on good quality blotting paper, they came in very handy in most homes, and were thus kept in sight for several weeks.

Demonstrating Gas Appliances

One of the most efficiently departmentized hardware stores in the country is that of the Ernst Hardware Company, Seattle, Wash. A large section of their stove department is given over to gas ranges and other gas appliances, and concerning the conduct of same. A. G. Heinmiller, the manager, recently said: "We believe in conducting a store on strictly department store principles. We employ salesmen in each department who are specialists in their own particular line, and each one is supposed to attend strictly to his own section." His advice regarding window display could be taken to heart by every store in the country. "We believe thoroughly in window displays. The more a store has the better off it is. I have found it a fact that when any special line is shown the sales of that merchandise come up fully 100 per cent. But we never display more than one line at a time, so that the entire attention of the spectator is focused upon that particular object. We have found it advantageous, too, to have one window extending entirely to the ground, so that the passer-by can see the floor of the store. This is what I call our demonstration window. It is used for personal demonstration of lines such as bathroom fixtures, hot water heaters, gas stoves and ranges, etc. It has been my experience that the average person does not want to make himself conspicuous — and while he may stop to look at a demonstration in an ordinary window, he will rarely enter the window to make a closer inspection, no matter how much it interests him. We have overcome this reluctance by having our cooking and heating demonstrations take place on the actual floor of the store—yet at the same time be visible to those passing by. Several times a year we give a gas cooking demonstration, sending out personal invitations to our regular patrons, and extending a general invitation to the others through the newspapers. An expert performs all the operations, even to the heating of the water, in plain view. There are chairs for those who wish to sit down; and several tables for any who wish to take notes. At this time we demonstrate not only the ranges, but the gas irons, toasters, and hot water heaters—and always have a large and interested audience during our demonstration week."

Pushing Fumeless Heaters

There is occasional complaint in some quarters that the fumes given out by gas stoves and heaters are unpleasant, therefore when this difficulty has been overcome it is well to give it wide publicity. This was the thought of the Baird-Bailhatche Company, San Francisco, Cal., who recently showed an enamelled gas radiator and heater, with a card: "A portable, fumeless Gas Heater, $12.50." At either side were two doll houses, with the front taken out

so that the interior could be seen. The first showed a tiny gas heater around which several dolls were gathered. Above it was a card:

For the old, Damp Days
of early fall a GAS HEATER
gives a pleasant warmth and glow.

At the other was a two-story house showing small hot water heaters in bath room and kitchen, with little dolls preparing to take a bath. Above it was a card, which suggested:

Hot Water is Necessary for Comfort
See that a HOT WATER HEATER
is installed

SATISFYING THE PUBLIC'S CURIOSITY

One of the best methods seen of attracting attention to one's line of gas heaters and ranges was that

adopted by the Schluters Hardware Company, of Oakland, Cal. At one side was an ordinary show window, while at the other there was a similar space, but no window was built in. Instead there was a six-inch platform filling the alcove, and this was covered with linoleum. On this floor were placed three gas ranges—standing right out in the open so that anyone could step up and examine them without entering the store. In order to discourage the pranks of small boys and the light fingered gentry these stoves were chained and padlocked to floor and wall—these chains only serving to enhance the curiosity of passers-by. Every part of the stove could be examined at will, and every day hundreds availed themselves of the opportunity.

WINDOW CARD

COOK WITH GAS

A display that was somewhat too crowded, but possessed considerable humna interest was recently arranged by the Maxwell Hardware Company, Oakland, Cal. In the rear was a gas range, beside which stood a woman taking a pan of beautifully browned biscuits from the oven. At either side were gas heaters, while down in front was a white enamelled two-burner stove, and a number of gas plates. This display was arranged to call attention to a midsummer sale of gas stoves, with the suggestion that the heaters, especially were just the thing for the cool days of early fall.

Welsbach National Advertising Campaign

Gas companies are now receiving deliveries of the new Welsbach product, the Welsbach Gas Heater, and the merchandising on a large scale of this interesting addition to the Welsbach line has begun after a preparation characteristic of the thoroughgoing methods of the Welsbach Company.

There was promise in advance that the entrance of the Welsbach Company into the field of gas heating would provide a new measure of economy and attractiveness in heaters. As recently announced by the company to the trade, it is the purpose of the Welsbach Company to make the Welsbach Gas Heater as well known in every corner of the United States as the Welsbach Light.

TO START SEPT. 11

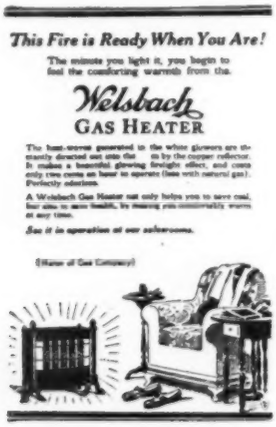
A campaign of national advertising is now in progress. In the four months remaining of 1920 there will appear in *The Saturday Evening Post* and the *Pictorial Review*, reaching about four million readers with each issue, a series of most attractive advertisements informing the public that Welsbach reliability in manufacture and Welsbach efficiency in operation can now be obtained in a gas heater. In addition to pointing out the economy of the gas heater these eye-pleasing advertisements picture also the luxuriousness of this ready means of quick heat.

Before the end of the year this ad-

vertising will have made approximately fourteen million separate appeals for the Welsbach Gas Heater and will have reached once a month in September, October, November and December every State in the Union and every city and town of importance. In at least one of these publications the advertising will be continued through the spring and summer.

DISPLAY CARDS, NEWSPAPER CUTS, ETC.

In addition to the widespread national advertising, supplementary advertising helps of highly attractive appearance and forceful selling value have been prepared. A striking feature of this Welsbach co-operation with dealers is a lithographed "cut-out" display, of appealing subject and rich artistic coloring, suitable for any window or counter. This cut-



out shows an attractive little boy abandoning his toys for the moment to enjoy the warmth radiating from a newly lighted Welsbach Gas Heater. The colors reproduce the firelight effect of the Welsbach Gas Heater very graphically and the picture leaves a pleasing impression of the happifying influence of having one of these heaters in the home.

Another dealer help is a series of newspaper advertising plates of varied sizes and interest, for the free use of gas companies.

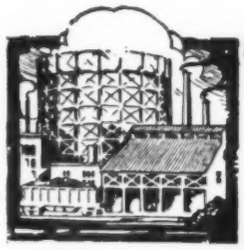
A folder to distribute to customers will be found valuable, and each month gas companies and dealers everywhere will be provided with proofs of the national advertising for use in their windows or salesrooms.

Allotment of Spaces at 1920 Exhibition of the American Gas Association

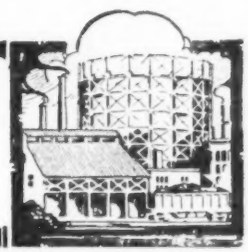
No.

1. Young Brothers Company, Detroit, Mich.
2. B. Ryan Company, New York, N. Y.
3. Humphrey Company, Kalamazoo, Mich.
4. Will W. Barnes, East Orange, N. J.
5. Baltimore Gas Apppliance & Manufacturing Company, Baltimore, Md.
6. General Gas Appliance Company, New York, N. Y.
7. The Surface Comustion Company, New York, N. Y.
8. Quick Meal Stove Company Div., St. Louis, Mo.
9. J. B. Slattery & Bro., Inc., Brooklyn, N. Y.
10. The Crandall Pettee Company, New York, N. Y.
13. New Process Stove Company, Div., Cleveland, Ohio.
14. Strause Gas Iron Company, Philadelphia, Pa.
15. Welsbach Company, Gloucester, N. J.
16. Welsbach Company, Gloucester, N. J.
17. The Eclipse Stove Company, Mansfield, Ohio.
18. The Hoffman Heater Company, Lorain, Ohio.
19. The Michigan Stove Company, Detroit, Mich.
20. Eriez Stove & Manufacturing Company, Erie, Pa.
21. NuStyl Gas Iron Company, Chicago, Ill.
22. Barnett Foundry & Machine Company, Irvington, N. J.
23. Robertshaw Manufacturing Company, Youngswood, Pa.
25. Ruud Manufacturing Company, Pittsburgh, Pa.
26. Chambers Manufacturing Company, Shelbyville, Ind.
27. The Milwaukee Gas Specialty Company, Milwaukee, Wis.
28. Famous Oven Manufacturing Company, New York, N. Y.
29. Lovekin Water Heater Company, Philadelphia, Pa.
31. The G. S. Blodgett Company, Burlington, Vt.
32. Grinnell Company, Inc., Providence, R. I.
34. The A. H. Wolff Gas Radiator Company, New York, N. Y.
35. Eastman Manufacturing Company, Manitowoc, Wis.
38. Reliable Stove Company Div., Cleveland, Ohio.
41. Wm. M. Crane Company, New York, N. Y.
43. Walker & Pratt Mfg. Co., Boston, Mass.
44. Roberts & Mander Stove Co., Philadelphia, Pa.
45. George D. Roper Corporation, Rockford, Ill.
46. James B. Clow & Sons, Chicago, Ill.
47. General Gas Light Company, New York, N. Y.
48. General Gas Light Company, New York, N. Y.
49. A-B Stove Company, Battle Creek, Mich.
50. The Kompak Company, New Brunswick, N. J.
51. Reznor Manufacturing Company, Mercer, Pa.
52. The Ofeidt Gas Fired Boiler Company, Inc., Nyack, N. Y.
53. The Bryant Heater & Manufacturing Company, Cleveland, Ohio.
54. The DeMatteis Broiler System Company, Inc., New York, N. Y.
55. Comstock Castle Stove Company, Quincy, Ill.
56. Charles A. Hones, Inc., Brooklyn, N. Y.
57. The Peninsular Stove Company, Detroit, Mich.
58. Abram Cox Stove Company, Philadelphia, Pa.
59. Johnson Gas Appliance Company, Cedar Rapids, Ia.
60. The J. H. Grayson Manufacturing Company, Athens, Ohio.
61. Detroit Stove Works, Detroit, Mich.
62. Union Stove Works, New York, N. Y.
63. Pittsburg Water Heater Company, Pittsburgh, Pa.
64. Weir Stove Company, Taunton, Mass.
65. Royal Art Glass Company, New York, N. Y.
66. Geo. M. Clark & Co. Div., Chicago, Ill.
67. National Stove Company Div., Lorain, Ohio.
68. The Cleveland Heater Company, Cleveland, Ohio.
69. The Improved Appliance Company, Brooklyn, N. Y.
70. Rathbone, Sard & Co., Albany, N. Y.
71. The Estate Stove Co., Hamilton, Ohio.
75. Elliott-Fisher Company, Harrisburg, Pa.
77. Underwood Typewriter Company, New York, N. Y.
80. Kalamazoo Loose Leaf Binder Company, Kalamazoo, Mich.
81. Burroughs Adding Machine Company, Detroit, Mich.
82. Burroughs Adding Machine Company, Detroit, Mich.
83. The Lattimer Stevens Company, Columbus, Ohio.
84. The Cutler-Hammer Manufacturing Company, Milwaukee, Wis.
85. The Sprague Meter Company, Bridgeport, Conn.

(*Continued on page* 176.)



NEWS OF THE GAS INDUSTRY



New Gas Standard Terms Outlined

The agreement between the City of Philadelphia and the United Gas Improvement Company changing the standard of gas from twenty-two candlepower to British thermal units has been signed by Mayor Moore and Samuel T. Bodine, president of the company. The agreement was drafted by City Solicitor Smith on instructions from the mayor after city council had passed an ordinance authorizing the proposed change of standards.

The new agreement sets forth the original draft under which the Philadelphia gas works was leased to the United Gas Improvement Company, and recites the requirement that twenty-two candlepower daily average be provided. The agreement, however, suspends that portion of the original measure in so far only as it requires the furnishing of gas of twenty-two candlepower until Jan. 1, 1920, unless such suspension be terminated at an earlier date by an ordinance or resolution of city council.

To Have Testing Stations

It also provides "that the United Gas Improvement Company shall furnish proper stations for testing the quality and standard of the gas, locafed at a distance of not less than one mile from each point of manufacture and shall equip the same with the proper appliances customary and necessary for such purposes. Tests shall be made and recorded daily by the United Gas Improvement Company, and such records shall be at all times open to the inspection of the city. All such tests shall be made in the presence of a representative of the city appointed by the mayor, who shall have the right also to make such tests himself at such stations in the presence of the company's representative.

"If the said the United Gas Improvement Company fails to maintain a supply of gas of a quality and and standard of not less than 530 British thermal units per cu. ft., daily average, during the life of this agreement, it shall pay to the city of Philadelphia the sum of $500 for each day during which such failure continues, except it be shown that the default was due to causes beyond the control of the United Gas Improvement Company, its successors or assigns.

Price Set for Thrift Burners

"And the United Gas Improvement Company further guarantees that during the life of this agreement the burners and mantles, commonly known as 'thrift burners,' shall be purchasable at retail at a price not exceeding fifteen cents each, and the mantles for the same at not more than ten cents each, and that all other mantles and burners now on the market and sold by said company shall continue to be sold at prices not exceeding those prevailing at the date of this agreement.

"The United Gas Improvement Company by letter to the mayor of the city of Philadelphia asserts it believes that 'the greater uniformity in heat units asked will result from this new standard (the British thermal unit standard), and which is not possible when candlepower is the standard, will result in at least as satisfactory service to our customers without increased cost.'"

The reason for the change from candlepower is stated by the company to be the desire to protect itself and the public against a shortage or a failure of the gas supply in the coming winter.

Revised Program of the Sixth National Exposition of Chemical Industries

When the Sixth National Exposition of Chemical Industries opens its doors in Grand Central Palace, New York City, Monday, Sept. 20, it will be the biggest display of its kind that has ever been seen. The total number of exhibitors to date exceeds 450, as against a high record for previous shows of 358, made in Chicago last year.

To house this large display four floors of the Palace are necessary, and the Chemical Show is the only exposition, outside of the annual automobile show, that requires such enormous floor space. There will be a remarkably wide range to the exhibits this year, and it has been decided to divide the exposition into sections. The Fuel Economy Division and the Materials Handling Division, both new this year have attracted many prominent concerns.

Five symposiums are on the week's program, and at all of these men of prominence in the chemical world will speak. The symposiums are divided into the following classifications: Fuel Economy, Materials Handling, Industrial Management, Chemical Engineering and Ceramic Motion Pictures will be a feature every evening, and these should prove of great interest to the public.

One of the features of the week will be the meeting of Chemical Warfare Post, American Legion. At the request of this post the management set aside the evening of Wednesday, Sept. 22, for them to transact business. This post is composed of men who served in the war, and will be open to all C. W. S. men.

Dr. Charles H. Herty, chairman of the advisory board of the exposition, will open the display at 8 p. m. on the evening of Monday, Sept. 20. He will be followed by Charles L. Reese, who will talk on "Co-operation in the Industries," and Erastus Hopkins, who will talk on "Problems of the American Exporter." Sir George E. Foster, Canadian Minister of Trade and Finance, will be the guest of the evening.

The motion picture program for the opening night consists of two subjects, "The United States Ammonium Nitrate Plant No. 2 at Muscle Shoals," by courtesy of Dwight P. Robinson & Co., and "Modern Packaging Methods," by

courtesy of the Pneumatic Scale Corporation.

Beginning Tuesday, afternoon and evening sessions will be held in order to carry out the big program. The program in detail follows:

PROGRAM

Monday Sept. 20

8 P. M.

Opening address by Charles H. Herty.

"Co-operation in the Industries," Charles L. Reese.

Sir George E. Foster, Canadian Minister of Trade and Commerce, will speak.

Followed by motion pictures:

1. "The U. S. Ammonium Nitrate Plant No. 2 at Muscle Shoals" (2 reels). (Courtesy Dwight P. Robinson & Co.)

2. "Modern Packaging Methods" (4 reels). (Courtesy Pneumatic Scale Corporation.)

Tuesday, Sept. 21

2 P. M.

Fuel Economy Symposium.

Chairman's Address, R. C. Beadle (managing editor, *Combustion*).

"Burning Coal at 100 Per Cent B. t. u. Efficiency," W. O. Rankin (Quigley Furnace Specialties Company).

"Saving Fuel by Controlling Chimney Losses," F. F. Uehling (Uehling Instrument Company).

"Fluid Heat Transmission," Alexander B. McKechnie (Parks-Cramer Company).

"Producer Gas and the Modern Mechanical Producer," W. B. Chapman (Chapman Engineering Company).

"Refractory Cement: Life Insurance for a Furnace," F. W. Reisman (Quigley Furnace Specialties Company).

"Preventing Conduction and Radiation Heat Waste," S. L. Barnes (Armstrong Cork Company).

"The Reason for the Fuel Saving in the Dressler Kiln," Conrad Dressler (American Dressler Tunnel Kilns, Inc.).

8 P. M.

Motion Pictures: Great U. S. Chemical Industries:

1. "The Story of Sulfuric Acid" (1 reel). (Courtesy General Chemical Company.)

2. "The Production of Salt for the Chemical Industry" (1 reel). (Courtesy International Salt Company.)

3. "Perfumes for the World" (2 reels). (Courtesy Antoine, Chiris Company.)

4. "A New Chemical Industry: Leather from the Ocean: Fish Leather Company and Ford Educational Film Company.)

Wednesday, Sept. 22

2 P. M.

Industrial Management Symposium.

"Ultra Analysis of Costs," Harrington Emerson (The Emerson Engineers).

"Reasearch in Industrial Conservation," H. E. Howe (Chairman, Division of Research Extension, National Research Council).

"Progress of the American Coal-Tar Industry," Grinnell Jones (U. S. Tariff Commission).

3 P. M.

Materials Handling Symposium.

Chairman's Address, Roy V. Wright (Editor, "Materials Handling Cyclopedia").

"Material Handling: The Paramount Problem," J. H. Leonard (Editor, *Freight and Terminal Engineering*).

"Chain, Power Transmission," F. G. Anderson (Morse Chain Company).

"Steel Collapsible Shipping Containers as Related to the Chemical Industries," Everett W. Morgan (Pneumatic Scale Corporation).

8 P. M.

Meeting of Chemical Warfare Post. (Speakers to be announced.)

Thursday, Sept. 23

2 P. M.

Chemical Engineering Symposium. (Meeting of the American Institute of Chemical Engineers, David Wesson, chairman.)

"A New Method of Destructive Distillation," Thomas W. Pritchard (Fuel Products Corporation).

"Nitration of Hydrocarbons," A. Hough and W. Savage.

"Recoverance: A Physical Property in Material and Its Importance," Robert G. Guthrie (Widney Test Laboratories).

"Operating Data of a Modern By-Product Coke Oven Plant," C. R. Bellamy.

"Canada and the Chemist," C. Price-Green (Canadian National Railways).

"Utilization of Peat" (illustrated), B. F. Haanel (Canada Department of Mines).

"Corrosion of Iron and Steel as Affecting the Industries," W. D. Richardson (Swift & Co.).

6.30 P. M.

Dinner of American Institute of Chemical Engineers at the Technology Club.

8 P. M.

Motion Pictures: Great U. S. Chemical Industries:

1. "Modern Coke and Gas Manufacture" (3 reels). (Courtesy The Koppers Company.)

2. "The Story of Petroleum Oil" (3 reels). (Courtesy Standard Oil Company of New Jersey.)

3. "The Asphalt Paving Industry" (1 reel). (Courtesy Barber Asphalt Paving Company.)

4. "Colloidal Movement in Asphalt" (1 reel). (Courtesy Barber Asphalt Paving Company.)

Friday, Sept. 24

2 P. M.

Ceramic Symposium.

(Meeting of the American Ceramic Society, R. H. Minton, chairman.)

"A Classification of Sheet Steel Enamels," R. R. Danielson (U. S. Bureau of Standards).

8 P. M.

Motion Pictures: Mining Industries:

1. "The Story of Coal" (4 reels). (Courtesy Sullivan Machinery Company and U. S. Bureau of Mines.)

2. "Building, Mining and Quarrying Machinery" (2 reels). (Courtesy Sullivan Machinery Company.)

3. "Producing Pumps and Engines" (1 reel). (Courtesy Midwest Engine Company.)

4. "Silver Mining in Ontario" (1 reel).

5. "Gold Mining in Ontario" (1 reel). (Courtesy Ontario Department of Mines).

6. "The Manufacture of Pottery" (1 reel). (Courtesy American Ceramic Society).

Saturday, Sept. 25

8 P. M.

1. "Manufacture of Asbestos" (1 reel.

2. "Silks and Satins" (2 reels). (Both by Courtesy Bureau of Commercial Economics.)

3. "Foamite Firefoam Extinguishing Apparatus at Work" (1 reel). (Courtesy Foamite Firefoam Company.)

4. "Continuous Motion, Conveying, Stacking, Elevating, Loading and Unloading Machinery" (1 reel). (Courtesy Brown Portable Machinery Company.)

5. "The U. S. Ammonium Nitrate Plant No. 2 at Muscle Shoals, Alabama" (2 reels). (Courtesy Westinghouse-Church Kerr, Inc.)

Higher Gas Rates Ruled for by Justice Swayze

A decision handed down in Trenton, N. J., by Justice Swayze in Supreme Court paves the way for an advance in rates by the Gas Light Company of Elizabeth. In sustaining the argument made by the company for a revaluation and in holding against the Public Utilities Commission which the company said refused to grant rates that would yield a sufficient income, Justice Swayze said the United States Supreme Court has taken cognizance of the present high prices and that a higher percentage of return in comparison with that of four or five years ago is justifiable.

The company was granted an increase in rates by the Public Utilities Commission in 1919 and the court refused to set this advance aside, stating that to do so would reduce the company's income still further. The court said it has not been determined to what extent high prices are indebted to inflated currency, but that prices are high and that the dollar of 1919 is worth very much less than the dollar was in 1916 or in 1911.

Justice Swayze stated that all interest notes on securities such as United States bonds, instead of 3 per cent are now 6 per cent, so that an 8 per cent return is an instance in the case of an active business in which the risk has increased and is much less than 8 per cent was in 1913.

The suit was instituted by the Elizabeth Gas Light Company in its own behalf and that of other similar companies against the Public Utilities Commission, alleging that the rates granted by the board were inadequate and should be reconsidered with a view to determining a new proper rate. The company charged that instead of valuing its property at a 1919 standard, during which year the rate increase was granted, the board had used a smaller valuation for the period of five years preceding Jan. 1, 1916, in reaching its decision.

It was held also that the board had made no allowance for a going concern, and that it had fixed an arbitrary sum which omitted in addition overhead charges on lands of the company. The court held that the board was in error in not making a 1919 valuation, and sustained the company further by holding that no allowance was made in fixing the valuation to an increase in interest rates to which bonds generally have been since the war.

The board attempted to defend the rates and the valuation upon the plea that the invested capital was small, but the court held that the par value of the stock and the outstanding bonds are not the sole gauges of the value of the property of a company which has been going six years, and whose capital has been reinvested to give better service to consumers.

Justice Swayze decided that the valuation fixed by the board was deficient, and ordered it set aside on the grounds of lack of evidence to uphold the manner in which it was made.

Gas as Fuel in Metal-Heating Processes

The industrial fuel department of the Gas & Electric Company of Baltimore, Md., has made some very successful installations of gas furnaces to be used for metal-heating purposes. The accompanying illustration shows four gas furnaces in operation in the Carroll Plant of the Drop Forge & Manufacturing Company of Baltimore.

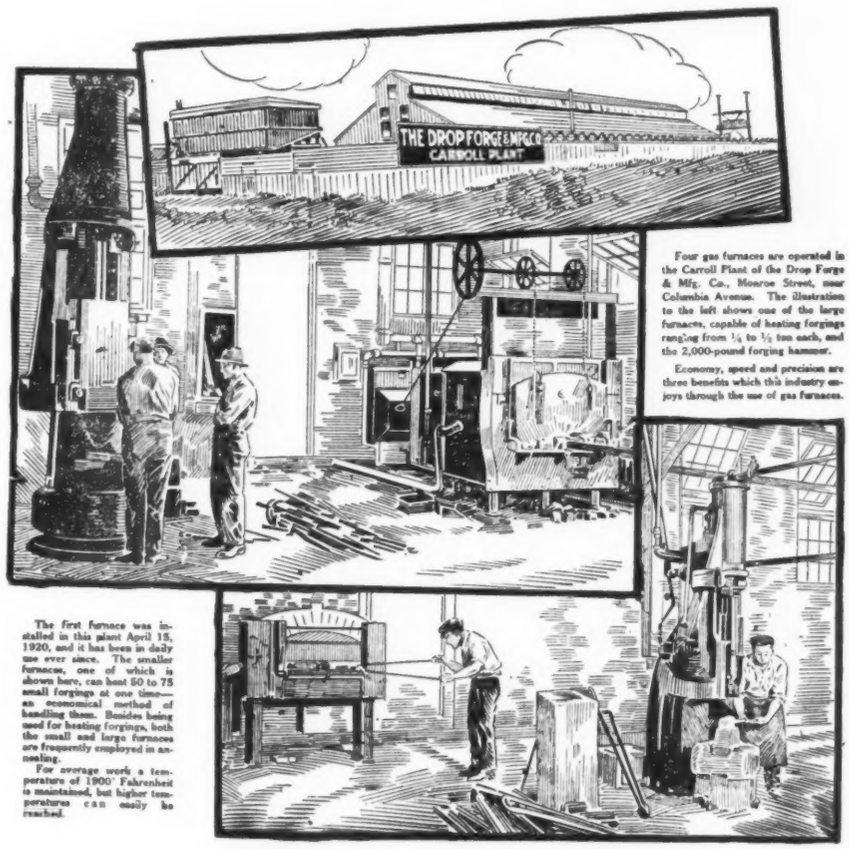
In processes which require precision in the use of heat no other fuel can be used as advantageously as gas.

Gas fuel is completely utilized by combustion confined to the space to be heated. No "live heat" is diverted from the work, for the products of combustion pass from the smallest possible vents.

It is the actual experience of many Baltimore iron and steel working plants that gas is the most convenient, clean and uniform fuel. They find that it gives the least oxidization and very little scale.

The net result of using gas fuel is economical manufacturing.

Every industry which calls for the application of heat to metal may profitably use gas fuel, and the manufacturer, for his own interests, should investigate without delay. There is a type of gas furnace for every need.



Four gas furnaces are operated in the Carroll Plant of the Drop Forge & Mfg. Co., Monroe Street, near Columbia Avenue. The illustration to the left shows one of the large furnaces, capable of heating forgings ranging from ¼ to ½ ton each, and the 2,000-pound forging hammer.

Economy, speed and precision are three benefits which this industry enjoys through the use of gas furnaces.

The first furnace was installed in this plant April 15, 1920, and it has been in daily use ever since. The smaller furnaces, one of which is shown here, can heat 50 to 75 small forgings at one time—an economical method of handling them. Besides being used for heating forgings, both the small and large furnaces are frequently employed in annealing.

For average work a temperature of 1900° Fahrenheit is maintained, but higher temperatures can easily be reached.

Gas Fuel

Ideal For Metal Heating Processes

Allotment of Spaces at 1920 Exhibition of the American Gas Association

(*Continued from page* 172.)

86. Bacharach Industrial Instrument Company, Pittsburgh, Pa.
87. The Koppers Company, Pittsburgh, Pa.
88. S. R. Dresser Manufacturing Company, Bradford, Pa.
89. United Lead Company, New York, N. Y.
90. Superior Meter Company, Brooklyn, N. Y.
91. The U. G. I. Contracting Company, Philadelphia, Pa.
94. Precision Instrument Company, Newark, N. J.
95. National Tube Company, Pittsburgh, Pa.
96. Connelly Iron Sponge & Gov. Company, New York, N. Y.
97. Meek Oven Manufacturing Company, Westport, Conn.
100. Monroe Calculating Machine Company, New York, N. Y.
101. Pittsburgh Meter Company, Pittsburgh, Pa.
102. American Meter Company, New York, N. Y.
103. Metric Metal Works, Erie, Pa.
104. The Roberts Brass Manufacturing Company, Detroit, Mich.
105. The Bartlett Hayward Company, Baltimore, Md.
106. Quigley Furnace Specialties Company, New York, N. Y.
107. Republic Flow Meters Company, Chicago, Ill.
108. The West Gas Improvement Company of America, New York, N. Y.
109. Equitable Meter Company, Pittsburgh, Pa.
110. H. Mueller Manufacturing Company, Decatur, Ill.
111. The Western Gas Construction Company, Fort Wayne, Ind.
112. John J. Griffin & Co., Philadelphia, Pa.

Court Modifies Gas Company Order

Judge Learned Hand in the United States District Court in an additional opinion rendered in the suit instituted by the Consolidated Gas Company of New York against Attorney General Newton, Public Service Commissioner Nixon and others from enforcing the statutory gas rate modified his decree of Aug. 1, which permitted the plaintiff to advance its gas rate.

The Consolidated in a petition submitted to the court suggested that the decree should be modified to permit a provision for disposing of the excess over 80 cents collected to clarify the retroactive effect of the rate when fixed and because of the absence of specified findings.

The court in modifying the decree on the first suggestion permits the Consolidated Gas Company to deposit with liberty bonds at market value and other bonds recognized as a legitimate investment by New York banks. In granting this modification the court charges the special master with calling upon the gas company for more bonds when their value equals the cash for which they were substituted. The court also permits the substitution of surety company bonds as to withdrawal of cash by presenting bonds. The interest on all bonds so issued must be 7 per cent and no single surety company will be allowed to issue a bond in excess of $500,000.

The court refused to grant the other petitions submitted by the petitioner. In passing upon these suggestions the court said:

"The petitioner says that I have exceeded my jurisdiction by imposing as a condition upon the continuance of the injunction that the final disposition as security shall be distributed retroactively in accordance with the new rate to be promulgated. The argument is that I have assumed the power of the New York Legislature and have substituted a rate of my own where none existed."

Judge Hand held that his decision of Aug. 4 does not conflict with the power of the New York Legislature. "Having experienced lean years," he said, "the petitioner believes it should be permitted a short period of milk and honey."

He continues by saying that the petitioner bases his contention upon the supposition that the new rate will be inadequate, which is no argument to advance before a Federal judge.

Increased Gas Rates for Many Illinois Cities

The Illinois State Public Utilities Commission has put into effect orders increasing gas, electric, water and traction rates in 147 northern Illinois towns.

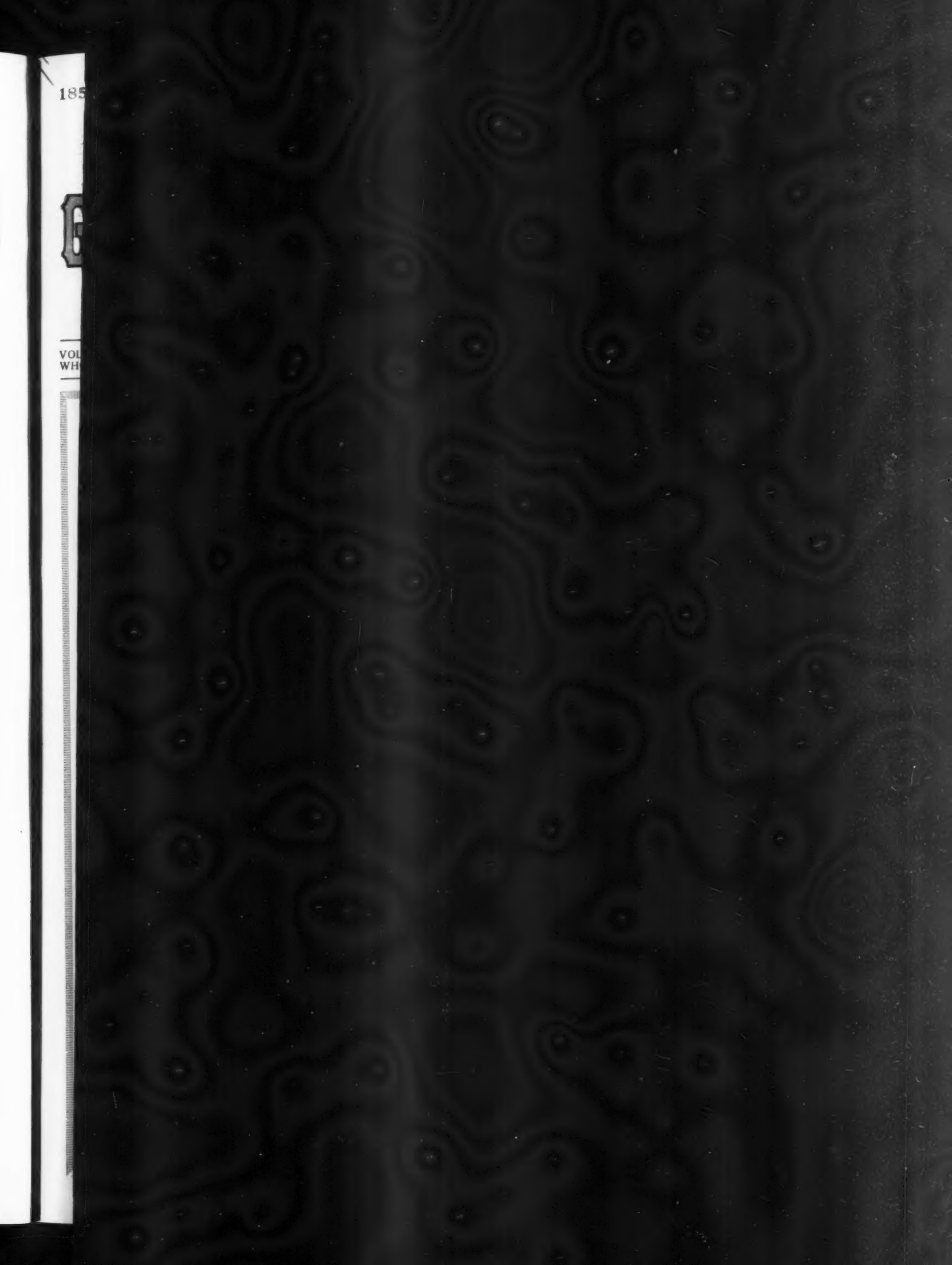
The traction order applied to the Chicago and West Towns Railway System and the Evanston surface lines. The other orders raised the gas and electric charges of the Public Service Company of Northern Illinois.

Personal Notes

Vice-President John W. Green of Acorn Works Dies

John D. Green, vice-president of Rathbone, Sard & Co., died in Aurora, Ill., Aug. 15. Mr. Green was one of the best-known men in the stove industry. He came to the Acorn Works from the Detroit Stove Works, where he had been associated in an official capacity for eight years. He was associated with the stove industry for the past twenty-five years and in losing Mr. Green it has lost one of its greates members.

W. E. Moss, managing director of the Fulton Fuel & Light Company, Fulton, N. Y.; Coldwater Gas, Light & Fuel Company, Coldwater, Mich.; Monroe Gas Light & Fuel Company, Monroe, Mich.; Peoples Light & Fuel Company,' Hillsdale, Mich.; Columbus Gas Light Company, Columbus, Ind.; Grand Haven Gas Company, Grand Haven, Mich.; Citizens Gas Company, Hannibal, Mo., and Winston-Salem Gas Company, Winston-Salem, N. C., announces the appointment of H. M. Eaton as general manager of these companies, Vice-President B. O. Tippy resigned and also of the appointment of T. C. McKenzie as assistant general manager.

Miss Helen Ostertag has been made publicity agent and welfare worker for the Empire Gas & Electric Company in Kansas. The position pays a fine salary, and Miss Ostertag has work for which she is particularly fitted. She travels over the State talking before clubs and other organizations on the conservation of gas. She has a high class demonstration at her command when the occasion demands demonstrations. At the close of the war Miss Ostertag proved she had executive ability as head of the Kansas Welcome Association in New York. It was at that time she attracted the attention of officials in the Empire Gas & Fuel Company, who have offered her the present position.

Blackstone Valley & Electric Company, Woonsocket, R. I., reports for June gross earnings of $271,326, increase $69,605. For year ended June 30 $3,018,777, increase $491,055.